

Clean Version of Amended Claims:

- 1 *Sub E1* 9. A process for controlling the pressure within a chamber, comprising the steps of:
- 2 initial generating an originating valve position feedback signal, said originating valve
- 3 position feedback signal comprising data representing the position of a motor drive
- 4 operatively connected to a valve when said valve resides in an originating position, said
- 5 originating position defined as the position of said valve prior to commencement of said
- 6 chamber pressure control;
- 7 first generating a pressure sensor signal responsive to the pressure in said chamber;
- 8 second generating a step command signal responsive to said pressure sensor signal
- 9 and a tool logic signal, said step command signal generating comprising applying a pressure
- 10 control algorithm to said pressure sensor and tool logic signals;
- 11 third generating a direction/speed command signal responsive to said step command
- 12 signal and said valve position feedback signal, said direction/speed command signal
- 13 generating comprising applying a position control algorithm to said step command and valve
- 14 position feedback signals;
- 15 actuating said valve responsive to said direction/speed command signal, said
- 16 actuating comprising moving said valve by operation of said motor drive, said actuating
- 17 resulting in said valve residing in a position, said valve in fluid communication with said
- 18 chamber;
- 19 fourth generating another said valve position feedback signal responsive to said
- 20 position of said valve, said valve position feedback signal comprising data representing the
- 21 position of said motor drive operatively connected to said valve; and
- 22 repeating said third generating, said actuating and said fourth generating steps until
- 23 said pressure is controlled adequately.

14. A process for controlling the fluid flow through a conduit whereby the pressure in a chamber in fluid communication with said conduit is controlled, comprising the steps of:

initial generating an originating valve position feedback signal, said originating valve position feedback signal comprising data representing the position of a motor drive operatively connected to a valve when said valve resides in an originating position, said originating position defined as the position of said valve prior to commencement of said fluid flow control;

generating a pressure sensor signal responsive to the pressure in said chamber;

generating a step command signal responsive to said pressure sensor signal and a tool logic signal, said step command signal generating comprising applying a flow control algorithm to said pressure sensor and tool logic signals;

generating a direction/speed command signal responsive to said step command signal and said valve position feedback signal, said direction/speed command signal generating comprising applying a position control algorithm to said step command and valve position feedback signals;

actuating said valve responsive to said direction/speed command signal, said actuating comprising moving said valve by operation of said motor drive, said actuating resulting in said valve residing in a valve position, said valve in fluid communication with said conduit;

generating another said valve position feedback signal responsive to said position of said valve, said valve position feedback signal comprising data representing the position of said motor drive operatively connected to said valve; and

repeating said direction/speed command signal generating step, said actuating step and said valve position feedback signal generating step until said conduit fluid flow and said chamber pressure are controlled adequately.

Please add the following new claims:

19. A process for controlling the pressure within a chamber, comprising the steps of:

initial generating an originating valve position feedback signal, said originating valve position feedback signal comprising data representing the position of a motor drive assembly operatively connected to a valve when said valve resides in an originating position, said originating position defined as the position of said valve prior to commencement of said chamber pressure control;

first generating a pressure sensor signal responsive to the pressure in said chamber;

second generating a step command signal responsive to said pressure sensor signal and a tool logic signal, said step command signal generating comprising applying a pressure control algorithm to said pressure sensor and tool logic signals;

third generating a direction/speed command signal responsive to said step command signal and said valve position feedback signal, said direction/speed command signal generating comprising applying a position control algorithm to said step command and valve position feedback signals;

actuating said valve responsive to said direction/speed command signal, said actuating comprising moving said valve by operation of said motor drive assembly, said actuating resulting in said valve residing in a position, said valve in fluid communication with said chamber;

fourth generating another said valve position feedback signal responsive to said position of said valve, said valve position feedback signal comprising data representing the position of said motor drive assembly operatively connected to said valve; and

repeating said third generating, said actuating and said fourth generating steps until said pressure is controlled adequately.

20. The process of Claim 19, wherein:

2 ^{Sub F1} said valve further comprises a valve stem; and
3 said motor drive assembly comprises a motor drive and reduction gear means, said
4 reduction gear means operatively connected between said motor drive and said valve stem.

1 21. The process of Claim 20, wherein said motor drive assembly position comprises the
2 rotational position of said reduction gear means.

1 22. The process of Claim 19, wherein:

2 said valve further comprises a valve stem; and

3 said motor drive assembly comprises said valve stem, a motor drive and reduction
4 gear means, said reduction gear means operatively connected between said motor drive and said
5 valve stem.

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4 22. The process of Claim 21, wherein said motor drive assembly position comprises the position
2 of said valve stem.]

1 23. The process of Claim 19, wherein:

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2 said valve further comprises a valve stem; and

3 said motor drive assembly comprises a motor drive operatively connected to said
4 valve stem.

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1 24. The process of Claim 23, wherein said motor drive assembly position comprises the position
2 of said valve stem.

1 25. A process for controlling the fluid flow through a conduit whereby the pressure in a chamber in
2 fluid communication with said conduit is controlled, comprising the steps of:

3 initial generating an originating valve position feedback signal, said originating valve
4 position feedback signal comprising data representing the position of a motor drive assembly
5 operatively connected to a valve when said valve resides in an originating position, said
6 originating position defined as the position of said valve prior to commencement of said fluid
7 flow control;

8 generating a pressure sensor signal responsive to the pressure in said chamber;
9 ²⁵ generating a step command signal responsive to said pressure sensor signal and a tool logic
10 signal, said step command signal generating comprising applying a pressure control algorithm to
11 said flow sensor and tool logic signals;
12 generating a direction/speed command signal responsive to said step command signal and
13 said valve position feedback signal, said direction/speed command signal generating comprising
14 applying a position control algorithm to said step command and valve position feedback signals;
15 actuating said valve responsive to said direction/speed command signal, said actuating
16 comprising moving said valve by operation of said motor drive assembly, said actuating resulting
17 in said valve residing in a valve position, said valve in fluid communication with said conduit;
18 generating another said valve position feedback signal responsive to said position of said
19 valve, said valve position feedback signal comprising data representing the position of said motor
20 drive assembly operatively connected to said valve; and
21 repeating said direction/speed command signal generating step, said actuating step and said
22 valve position feedback signal generating step until said conduit fluid flow and said chamber
23 pressure are controlled adequately.

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1 ²⁶ 26. The process of Claim ²⁶ 25, wherein:

2 said valve further comprises a valve stem; and

3 said motor drive assembly comprises a motor drive and reduction gear means, said
4 reduction gear means operatively connected between said motor drive and said valve stem.

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1 ²⁷ 27. The process of Claim ²⁷ 26, wherein said motor drive assembly position comprises the
2 rotational position of said reduction gear means.

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1 ²⁶ 28. The process of Claim ²⁶ 25, wherein:

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2 said valve further comprises a valve stem; and

3 said motor drive assembly comprises said valve stem, a motor drive and reduction
4 gear means, said reduction gear means operatively connected between said motor drive and said
5 valve stem.

1 ³⁰ 29. The process of Claim ²⁹ 28, wherein said motor drive assembly position comprises the position
2 of said valve stem.

1 ³¹ 30. The process of Claim ²⁶ 25, wherein:

2 said valve further comprises a valve stem; and

3 said motor drive assembly comprises a motor drive operatively connected to said
4 valve stem.

1 ³² 31. The process of Claim ³¹ 30, wherein said motor drive assembly position comprises the position
2 of said valve stem.